

we possess of this kind of duplicates are generally deteriorated specimens, and therefore ought not to be received by provincial museums. On the other hand, our invertebrate series, especially of mollusks and insects, will always offer a certain number of well-preserved duplicate specimens, and a sufficient inducement for provincial museums to select their desiderata.

It has been suggested that as the British Museum has correspondents and collectors in almost every part of the globe, and has therefore greater facilities for obtaining specimens than any other institution, it should systematically acquire duplicates, and form a central repository, from which provincial museums could draw their supplies. If the necessary funds to carry out this scheme were granted, I cannot see any objection to it on the part of the British Museum which, on the contrary, would probably derive some benefit. But there is one, and in my opinion a very serious, objection, viz., that this scheme would open the door to the employment of curators of inferior qualifications; it would relieve the curator of a provincial museum of an important part of his duty, viz., to study for himself the requirements of his museum, the means of meeting them, and to become well acquainted with the objects themselves. A curator who has to be satisfied with the mechanical work of displaying and preserving objects acquired, prepared, and named for him by others takes less interest in the progress of his museum than he whose duty it would be to form a collection; he is not the person in whose charge the museum will flourish.

In speaking of the claims of Provincial Museums on the National Museum, the kindred Colonial institutions should not be forgotten. We owe to them much of our knowledge of the natural history of the Colonies; they are the repositories of the collections of the temporary and permanent surveys which have been instituted in connection with them; and they have concentrated and preserved the results of manifold individual efforts, which otherwise most likely would have been lost to science. The British Museum has derived great benefit from the friendly relations which we have kept up with them; and, therefore, they are deserving of all the aid which we can possibly give them, and which may lessen the peculiar difficulties under which they labour in consequence of their distance from Europe.

I am painfully aware that, in the remarks which I have had the honour of making before you, I have tried the patience of some, and not satisfied the expectations of others. But so much I may claim: that the views which I have expressed before you as my own are the results of many years' experience, and, therefore, should be worthy of your consideration; and that I am guided by no other desire than that of seeing the museums in this country taking their proper place in regard to biology, and as one of the most important aids in the instruction of the people.

### NOTES

IN mediæval ages Rheims was a seat of learning, and in 1547 the Cardinal of Lorraine established there a university, which flourished until it was suppressed at the French Revolution. But although the present Republican Government has instituted in this ancient city a school of medicine, the liberal arts are little cultivated by the inhabitants, who are mostly engaged in commercial and manufacturing occupations. Rheims possesses the greatest wine trade in the world and the richest woollen manufactures in France. So, although the French Association has met with a very handsome reception, the local budget of scientific contributions was very meagre indeed, except in the sections of anthropology and archæology, which were a local success. M. Cotteau gave an address describing the geological character of the Rheims district, and illustrated by the local exhibition which had been arranged in one of the halls of the Lycée by M. Perron. M. Lemoine, Professor in the School of Medicine of Rheims, exhibited a rich collection of objects of palæontological interest which had been formed by him from the surrounding district. This was exceptionally rich in objects of the cretaceous period, mostly of polished stone, and wonderfully preserved in the caves so numerous in the cretaceous formation, and which are now utilised to protect against variations of temperature an immense quantity of bottled wine destined to be sent to all parts of the world. An excursion, specially interesting for archæologists, was organised to Epernay, where M. Baye, a rich proprietor,

had collected in his château a number of curiosities belonging to the Carolingian periods. Two other special excursions were organised, the first to the ruins of old Courcy Castle and St. Gobain, the largest glass foundry in France, where a large lump was cast in presence of the visitors, and the second to St. Menchould, which was supposed in former times to be the key of French independence. The most attractive excursion was undoubtedly to the caves where champagne is manufactured by the old process, which was scientifically described by M. François, a chemist of Châlons-sur-Marne. A demonstration of the principles of the operation was given in the caves of Pommery, where Madame Pommery kindly permitted the visitors to make a practical test of the quality of her celebrated produce. Synoptical tables had been prepared exhibiting the progress of the manufacture. The superiority of the champagne manufactured in Rheims and vicinity is attributed not only to the long experience of the workmen and the excellence of the receipts used, but to the perfect equality of temperature maintained in the old galleries where it is stored. Some of these are several acres in area, and are quite full of bottles. After the final meeting a general excursion was made to the celebrated grotto of Han in Belgium. The two lectures by M. Perier on "Transformism," and M. Garel on "Radiant Matter," were delivered, at the solicitation of the local committee for their information; the lecturers confined themselves to the clear enunciation of known facts, and to experiments already well known to the scientific world. M. Javal gave a public lecture on the Hygiene of the Eye, and M. Richet on the Symptoms of Somnambulism. About 500 members were present at the meeting this year, exclusive of local members. Among foreign visitors were Professors Sylvester and Hennessy. At the final session M. Janssen was elected president for 1882, when the meeting will be held at La Rochelle, and M. Emile Trelat will be general secretary; they will act as vice-president and vice-secretary respectively for the session of 1881, which will be held at Algiers in the first week after Easter. The president of the Algiers session will be M. Chauveau, Professor at the Veterinary School of Lyons, and the secretary will be M. Maunoir, general secretary of the French Geographical Society. A very large attendance is anticipated, as a diminution of 50 per cent. on the fares is expected, and the visit will take place at an exceptionally advantageous season. A general committee has been formed, having at its head M. Tomel, senator of Oran, and director of the newly-created School of Sciences. The Governor-General will be honorary president, and M. MacCarthy, president of the Algiers Society of Natural Sciences, has been nominated by the General Committee of Rheims president of the Section of Geography. The Rheims authorities and citizens have done everything within their power to welcome their guests, and the meeting has been on the whole successful.

FROM an additional Circular sent us from the American Association we see that nearly all the railway lines connected with Boston, the place of meeting, offer great facilities for the conveyance of members. Some of the companies indeed give those attending the meeting free tickets, while the others issue tickets at one-half the usual rates. Is it too much to expect similar advantages from English companies? Has the attempt ever been made?

A VERY interesting annual meeting of the Entomological Club of the American Association was to be held at Boston on Tuesday. Among other subjects to be brought forward, Mr. A. R. Grote was to speak of generic characters in the Noctuidæ; Mr. E. P. Austin hoped to exhibit some interesting series from his extensive collection of North American Coleoptera; Mr. Wm. Saunders to discuss Insectivorous Birds, their merits and demerits; Rev. H. C. McCook to read a paper on the Honey Ants of the Garden of the Gods, Colorado; Mr. S. H.

Scudder to exhibit interesting fossil insects, and illustrations of New England Butterflies; Dr. J. L. Le Conte to present an essay on Lightning Bugs, and give a list of Coleoptera hatched from a few hickory twigs; and Dr. H. A. Hagen to present papers on the Hessian Fly, on the anatomy of *Productus deceptus*, and on a new worm parasitic on insects.

THE third International Congress of Geography meets at Venice from the 15th to the 22nd of September, 1881, under the patronage of King Humbert. The accompanying exhibition will be opened on September 1, and will not be closed before October 1. The Congress will be divided into seven groups: 1. Mathematical, Geodetic, and Topographical Geography. 2. Hydrography and Maritime Geography. 3. Physical, Meteorological, Geological, Botanical, and Zoological Geography. 4. Historical, Ethnographical, and Philological Geography. 5. Economical, Commercial, and Statistical Geography. 6. Methodology; Geographical Education. 7. Exploration. Further information may be obtained by addressing "Al Comitato ordinatore del 3° Congresso Geografico Internazionale, 26, Via del Collegio Romano, Roma."

THE Sixth Annual Conference of the Cryptogamic Society of Scotland will be held in Glasgow, on September 27-30, and October 1 and 2, when all persons interested in cryptogamic botany are invited to attend. A detailed prospectus of the meetings, excursion, and show may be had on application to the Local Secretaries, on and after September 6. Fellows and others from a distance who purpose attending the Conference are requested to send intimation thereof as soon as possible to the Secretary, to whom also intimation of papers to be read should be sent. Fellows are requested to bring or send specimens of interest in any branch of cryptogamic botany for exhibition at the meeting and show. The Secretary is Dr. F. Buchanan White, Perth, and the Local Secretaries Mr. W. J. Milligan, 180, West Regent Street, and Mr. A. Turner, 122, Hospital Street, Glasgow.

THE annual meeting of the Mineralogical Society of Great Britain will be held at Swansea, in the Unitarian School-room, High Street, on Friday, August 27, at 2.30 p.m. The Council will meet at 2 p.m. All communications intended for this meeting should be addressed to the Secretary, Mr. J. H. Collins, F.G.S., at the Reception Rooms, British Association, Swansea.

WE understand that the long-expected first volume of Prof. Arthur Gamgee's "Text-book of Physiological Chemistry" may be expected to appear in the middle of September. This volume, which will be published by Macmillan and Co., deals with the Chemistry of the Tissues, and is to be succeeded in the space of a few months by a second and concluding volume, treating of the Chemical Processes Associated with the Animal Functions. Dr. Gamgee's work is, we are informed, a more elaborate treatise than has hitherto appeared on this branch of science. It deals with the subject from the point of view of the physiologist and the physician rather than from that of the pure chemist; it is indeed an advanced treatise, dealing with those departments of physiology and pathology which involve a study of chemical facts, and not, as all text-books of physiological chemistry, save those of Lehmann and Kühne, have been, a work treating of one branch of Applied Chemistry. The work is well illustrated; it contains a very full and complete account of the whole literature of each subject treated of, and besides being a systematic treatise, is intended to serve as a practical guide for the student of physiological chemistry.

IN Mr. Wallace's forthcoming work—"Island Life," no less than five chapters are devoted to geological subjects which he considers to be of fundamental importance for the study of questions of distribution,—such as the permanence of continents

and oceans, glacial epochs and mild arctic climates, and the measurement of geological time. A complete and in many respects a novel solution of the problem of geological climates is attempted; and as the distribution of both animal and vegetable forms is dealt with this volume will probably interest a wide class of readers.

MR. R. BULLEN NEWTON, assistant naturalist under Prof. Huxley in the Museum of Practical Geology, Jermyn Street, has received an appointment in the geological department of the British Museum.

A BALLOON ascent was made at Cherbourg, on the occasion of the *fête* given by the Municipality to M. Grévy, by MM. Perron and Capt. Gauthier. The general direction of the wind being from the land to the sea, a government steamer was sent out to secure the safety of the aeronauts if necessary. Before starting not less than thirty pilot-balloons were sent up to ascertain the superposition of the aerial currents. It was proved that at 400 metres the wind was blowing from the sea. After having travelled for more than an hour in the direction of Portsmouth, the aeronauts opened their valve and returned safely on shore. More than a hundred thousand spectators witnessed the experiment. The culminating point of the ascent was an altitude of 1,500 metres, where the travellers could see the English coast, the whole of the Isle of Wight, &c. The scenery is stated to have surpassed description. Some very curious observations were made on the colours of the sea. In the places where the water is very deep it looks quite inky, and the curves of level are so clearly manifested that they bear comparison with equidistant lines worked on ordnance maps. When travelling at so great an altitude ships can be detected with some difficulty; but smoke can be seen even when the smoke-producing steamer can hardly be perceived with the naked eye.

AT a recent meeting of the Asiatic Society of Bengal, Mr. L. Schwendler gave an instance of a Langur monkey (*Semnopithecus entellus*) having been taught to do useful work. Mr. Schwendler's "trustworthy informant" was Babu B. Pyne, a member of the Government Telegraph Department. The Babu says:—"Some years ago I had a Langur which, when standing erect, measured fully 2 feet 6 inches. The animal was very powerful, and could easily pull a punkha measuring eight feet in length. It was a male, and even when young showed a disposition to be highly savage. The older it got the more savage it became. Seeing the great power this monkey had, I wanted to utilise it, and therefore intended to employ it for the purpose of pulling punkhas. The teaching I effected in the following manner:—The monkey was tied by the waist close to a strong pole, so that it could not move either backwards or forwards, or right or left. Both hands were tied to a rope attached to a punkha, which was regularly pulled from the other side by a man. Thus the animal had to sit in one place, and could only move its hands up and down with the punkha rope. In this way the monkey in a comparatively short time learnt to pull the punkha by itself, and was so employed by me for several years. It always kept in first-rate health, enjoyed its work immensely, and did it equally well, if not better, than a cooly. During the rains it suffered from fever, and ultimately died. Putting now this trained monkey in the place where the man used to pull the punkha, and a new Langur in the place where the trained monkey formerly sat, I attempted to teach successively four more monkeys, two of which were females. I succeeded perfectly in teaching the males, but was quite unsuccessful with the females." Mr. Schwendler said there is a certain amount of intelligence required to do this work, since the arms, in their up and down movements, have to keep time with the swinging punkha. Mr. Schwendler mentioned some other instances in which the display of intelligence by monkeys had



been noticed. In particular he mentioned a case in which a monkey, which had sustained a fall from trusting to a rotten branch while swinging on a tree, had been observed afterwards to examine the branches of the tree, and to break off those which it found to be rotten. Some discussion ensued as to whether the action of the monkey in this case was the result of intelligence, and some of the members present were of opinion that it might have been the result simply of anger caused by the fall. Mr. Schwendler, however, stated that he had for long made the habits of animals a study, and that he was convinced of the fact that monkeys were possessed of much intelligence; and he vouched for the authenticity of the statements made in the paper read regarding the monkeys which were taught to pull a punkha.

THE *Times* Geneva correspondent telegraphs as follows:—"An interesting geological discovery has been made in the neighbourhood of Solothurn. On removing a mass of superincumbent sand and gravel to prepare for some quarrying operations, the rock beneath was found to be quite smooth and intersected with old water channels. The excavation being continued, a number of enormous holes filled with great stones were laid bare. These holes, like those in the famous Gletcher Garten at Lucerne, are due to the action of water, which, flowing through rifts in the glacier that ages past covered the rock, set in movement the stones beneath, whereby the 'Giant's Rattles,' as they are called, were hollowed out; but while the rock at Lucerne is sandstone, the formation at Solothurn is hard limestone and quartz."

AT Judicarien and Riva, in the Tyrol, a rather smart shock of earthquake was felt on the 12th inst.

A CORRESPONDENT writes in reference to our Notes regarding the successes of the ladies in the recent London University Examination (*NATURE*, vol. xxii. pp. 346 and 374), calling attention to the fact that the position of the successful candidates in the respective divisions of the lists referred to (*i.e.*, the Pass Lists of the 1st B.A. and 1st B.Sc. Examinations) is determined by the alphabetical order of their names, and is therefore accidental. This does not refer to the Honours Lists, which have since been published, and in which the candidates are arranged in order of merit.

FROM a report drawn up by Don Mariano Barcena, Director of the Central Meteorological Observatory of Mexico, the *Gardeners' Chronicle* learns that it is proposed to establish a large number of stations throughout Mexico for the uniform record of observations on the temperature, pressure, rainfall, vegetation, &c. Should this project be properly inaugurated and continued, it will be of the greatest service to science. The observers will likewise report on the state of the crops, prices of grain, and other commodities, &c., as affected by the weather.

MR. BRYCE-WRIGHT writes to the *Times* that numbers of false turquoises have during the last two weeks come from Vienna and are still arriving? Their detection is somewhat difficult, the backs of every specimen having been pecked out and the holes filled with a black cement, to imitate the matrix of La Vieille Roche. They are, however, a little lighter than the real turquoise, the specific gravity being 2.4, while that of the genuine stone is 2.6 to 2.8. The easier method of distinguishing them is to use a penknife to the false matrix, which can easily be removed, revealing the artificial perforations.

THE additions to the Zoological Society's Gardens during the past week include two Macaque Monkeys (*Macacus cynomolgus*) from India, presented respectively by Mr. H. G. Wainwright and Mr. Cecil Peele; two Tcheli Monkeys (*Macacus tcheliensis*) from Shanghai, China, presented by Dr. Bushell; a Brown Capuchin (*Cebus fatuellus*) from Guiana, presented by Mr. Percy

E. Scrutton; a West Indian Agouti (*Dasyprocta cristata*) from the West Indies, presented by Mr. W. H. Braithwaite; a Spotted Salamander (*Salamandra maculosa*), European, an Axolotl (*Siredon mexicanus*) from Mexico, presented by Dr. Gibbs, F.Z.S.; a Common Cormorant (*Phalacrocorax carbo*), British, deposited; a Straw-necked Ibis (*Carphibis spinicollis*), a Maned Goose (*Bernicla jubata*) from Australia, an Elate Hornbill (*Buceros elatus*) from West Africa, two Brown Mynahs (*Acridotheres fuscus*) from India, purchased.

### OUR ASTRONOMICAL COLUMN

THE SATELLITES OF SATURN.—Mr. Marth has published (*Astron. Nach.*, No. 2,328) his ephemeris of the five interior satellites of Saturn, with the usual fullness of detail. For *Mimas* he now assumes accelerated motion, leaving it to be decided by further observation whether this hypothesis is the correct one to account for the discrepancies which have been recently remarked between his predictions and observation in the case of this difficult object. Mr. Marth's times of greatest elongations of *Mimas* now accord within 0.2h. with those deduced from the circular elements which we have adopted on several occasions for predictions in this column, and which were founded upon a very approximate discussion of measures at the Naval Observatory, Washington, in the years 1874-77. Without some such hypothesis as accelerated motion, however, these elements will not represent the observations even as late as Lassell's, and it has been only with the view of facilitating to some extent the identification of the satellite about this epoch that they have been from time to time employed. They give the following times of elongations, which may be compared with Mr. Marth's:—

| East Elongations |    |    | West Elongations |    |    |
|------------------|----|----|------------------|----|----|
|                  | h. | m. |                  | h. | m. |
| Aug. 30 ...      | 15 | 15 | Sept. 7 ...      | 15 | 30 |
| 31 ...           | 13 | 52 | 8 ...            | 14 | 7  |
| Sept. 1 ...      | 12 | 29 | 9 ...            | 12 | 44 |
| 2 ...            | 11 | 6  | 10 ...           | 11 | 21 |
| 3 ...            | 9  | 43 | 11 ...           | 9  | 58 |

THE BINARY-STAR  $\alpha$  CENTAURI.—Mr. Tebbutt communicates to the *Observatory* measures of this object made at Windsor, N.S.W., in the first half of the present year; duly weighted the mean result is:—

1880.311 ... Position,  $186^{\circ}53$ ; Distance,  $5''.16$ .

Dr. Doberck's elements give the angle less by  $2''.9$ , and the distance also less by  $0''.21$ . An able investigation on the parallax of this star, with a new determination of the orbit by Mr. W. L. Elkin of Strassburg has just appeared.

THE GREAT COMET OF 1880.—Dr. B. A. Gould, the director of the National Observatory of the Argentine Republic at Cordoba, has passed through London during the last week. He describes the appearance of the Southern Comet of February, of which he has put upon record the longest series of observations as involving very great difficulty in fixing accurate positions with the telescope, while with the naked eye there was an equal difficulty in saying where the tail originated, there being no nucleus, or head, to use the old term, worthy of the name.

If a systematic search for comets had been organised in the southern hemisphere (shall we say had southern astronomers been so far ahead of their northern confrères?) possibly the comet might have been detected before perihelion, and some most interesting results would have accrued. The reader may perhaps like to see the track which the comet must have followed in its approach to the sun, which the subjoined places will sufficiently indicate:—

| 12h. G.M.T.       | Right Ascension. | Declination.   | Distance from Earth. | Intensity of Light. |
|-------------------|------------------|----------------|----------------------|---------------------|
| 1879, Dec. 28 ... | $51^{\circ}0$    | $-73^{\circ}5$ | $0.630$              | $2.3$               |
| 1880, Jan. 2 ...  | $9^{\circ}1$     | $69^{\circ}8$  | $0.611$              | $3.1$               |
| 7 ...             | $346^{\circ}3$   | $59^{\circ}9$  | $0.621$              | $4.0$               |
| 12 ...            | $334^{\circ}8$   | $48^{\circ}8$  | $0.660$              | $5.2$               |
| 17 ...            | $327^{\circ}4$   | $38^{\circ}2$  | $0.727$              | $7.4$               |
| 22 ...            | $321^{\circ}1$   | $-28^{\circ}5$ | $0.824$              | $14.7$              |

The last column contains the values of  $\frac{1}{r^2 \Delta^2}$ , and may be of questionable application in this instance.